Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

January 7, 1991

Mr. A. Bert Davis
Regional Administrator - RIII
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Il 60137

Subject: Dresden Nuclear Power Station Units 2 and 3
Response To Notice of Violation Contained in
Inspection Report 50-237/90023; 50-249/90023
NRC Docket Nos. 50-237 and 50-249

Reference: W. D. Shafer letter to Cordell Reed dated
November 28, 1990 transmitting NRC Inspection
Report 50-237/90023; 50-249/90023

Dear Mr. Davis:

This letter provides the Commonwealth Edison Company (CECo) response (attached) to the subject three Level IV violations transmitted by the referenced NRC Inspection Report for Dresden Station. The three violations identified were: 1) inadequate training to assure satisfactory knowledge of plant administrative requirements, 2) the failure to follow procedures and instructions and 3) inadequate corrective actions with regard to fuel bundle mispositioning events. CECo has reviewed the Notice of Violations and in all but one example agrees that the violations occurred as described. The corrective actions detailed in the response will bring the Station into compliance and will prevent similar violations from occurring.

CECo recognized a negative trend in human performance, personnel-related events and views this as a serious matter. Actions were taken to address each event, but we also have taken additional timely, broad, comprehensive actions to address the identified negative trend. These actions are beyond those in the detailed responses to the Notice of Violation and are listed in Attachment A.

If your staff has any questions or comments concerning this letter, please refer them to Rita Radtke, Compliance Engineer at 708/515-7284.

Very truly yours,

T. J. Kovach
Nuclear Licensing Manager

cc: B.L. Siegel, Project Manager, NRR
D. E. Hills, Senior Resident Inspector
NRR Document Control Desk

Attachment 9102110245

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ATTACHMENT A

Additional actions taken to address human performance, personnel-related events:

- A meeting was held with all supervisors (CECo & Contractor) on October 17, 1990 to raise overall onsite awareness. Each Supervisor was required to take notes during the meeting, meet with those employees he supervises and return his notes with names of those he met with by October 18, 1990.
- A station "Self Check" initiative, called VerAntSO, was introduced the week of October 22, 1990. VerAntSO is an acronym used to remind everyone of the self-check concept and stands for Verify, Anticipate, Stop and Observe.
- An INPO assist visit to review Human Performance activities was requested and performed on October 25 and 26, 1990.
- The CECo Performance Assessment Department performed an overview of outage concerns during the week of October 22, 1990.
- A licensed individual from Nuclear Quality Programs Department from another CECo station performed an overall review of in-plant activities during the week of October 22, 1990.
- An in-plant walkdown and independent verification of one hundred (100) out-of-services was performed to verify proper isolation of equipment for maintenance activities.

/scl:ID707:2

RESPONSE TO

NOTICE OF VIOLATION

VIOLATION 1

10 CFR 50, Appendix B, Criterion II, as implemented by Commonwealth Edison's "Quality Assurance Program" requires indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained.

Contrary to the above, indoctrination and training of personnel performing activities affecting quality was inadequate in assuring proficiency was achieved and maintained as to administrative requirements as indicated in the following examples:

a. Lack of operations personnel knowledge of Dresden Administrative Procedure (DAP) 7-5, "Operating Logs and Records," Revision 8, and Dresden Operating Abnormal (DOA) Procedure 902-5 G-2, Revision 3, requirements for maintaining the Control Rod Drive Accumulator High Water/Low Pressure Alarm Log (AHWLPAL) resulted in the AHWLPALs for both units not being maintained between April 1990 and August 3, 1990. As such the licensee's program to identify repeat failures of accumulator alarms was not effective during that time period (50-237/90023-01a (DRP)).

b. Lack of technical staff personnel knowledge regarding recognizing and processing conditions adverse to quality resulted in a failure to properly identify a procedural nonadherence involving maintenance of the AWHLPAL when discovered in May 1990. Because of this, corrective actions to prevent recurrence were not taken at that time. (50-237/90023-01b (DRP)).

This is a Severity Level IV violation (Supplement I).

DISCUSSION

On December 8, 1989, DAP 7-5, Revision 8 was approved. This procedure established an Accumulator High Water/Low Pressure Alarm Log (AHWLPAL). On the same day, a revision to the Unit 2(3) Operators Daily Surveillance Log (Appendix A) was approved which removed the weekly Control Rod Drive Accumulator Log from Appendix A so that there would not be two procedures recording the same information. The intent of the AHWLPAL was to maintain an ongoing record of Control Rod Drive Accumulator Alarms in order to identify problem accumulators. Either the AHWLPAL or the Control Rod Drive Accumulator Log (removed from Appendix A) would have been adequate for documenting Control Rod Drive Accumulator High Water/Low Pressure Accumulator Alarms. An AHWLPAL Book was established at each Unit Operator's Desk.

The on-shift licensed personnel did not receive formal instruction or notification as to the maintenance of the AHWLPAL during the day-to-day operation of the plant. Therefore, the implementation of the AHWLPAL was only partly accomplished by revising the procedures. The on-shift licensed personnel, responsible for maintaining the AHWPAL, did not receive training on this program.

The Technical Staff System Engineer learned in early May 1990 that the AHWLPAL was not being properly maintained as required by DAP 7-5 and realized that either the operators would have to be trained on the use of the log or that the program would have to be revised. During this same time period, the Operations Department was implementing a program to independently verify accumulator valving operations. This requirement was to be implemented by having the independent verifier sign the AHWLPAL log book. To resolve these two unrelated concerns in a coordinated manner, it was decided to place the AHWLPAL back into Appendix A. This revision to DAP 7-5 took longer than expected because of other changes to the procedure that were not related to the AHWLPAL. It took three months to resolve all of the issues with DAP 7-5. On August 30, 1990, the requirements for the AHWLPAL were transferred from DAP 7-5 back to the Unit Operator's Daily Surveillance Log, Appendix A, at which time CRD accumulator logging was resumed.

Action to correct the problem was taken, but it was not documented through the use of DAP 9-12, "Procedural Adherence Deficiencies." The System Engineer was not aware that DAP 9-12 should have been used as the mechanism to document this need for corrective action.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

The logging of accumulator alarms was transfered back to Appendix A on August 30, 1990. Since that date all accumulator alarms have been logged.

CORRECTIVE ACTIONS TO PREVENT FURTHER NONCOMPLIANCES

1. The Operations Department, with assistance from the Training Department and the Technical Staff, will develop a method to ensure that when procedural changes are made that alter the day-to-day routine of licensed operators, a review is made to determine what training should be completed to properly implement the change. This methodology will be in-place by March 31, 1991.

2. DAP 9-12 will be tailgated to all station personnel by February 7, 1991. Emphasis will be directed to its purpose and use.

3. A number of events, occurring during the past six months, have indicated that the knowledge level of station personnel with regard to the contents of various Dresden Administrative Procedures is less than desired. To raise the station personnel knowledge level of the contents of the Dresden Administration Procedures, the Station's ongoing training program will be reviewed to verify that all personnel involved in activities addressed in each administrative program/procedure are appropriately trained. A matrix of Dresden Administrative training requirements will be produced by January 31, 1991 and appropriate changes will be made to the ongoing programs by June 30, 1991.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on August 30, 1990 at which date all accumulator alarms were properly logged.

VIOLATION 2

10 CFR 50, Appendix B, Criterion V, as implemented by Commonwealth Edison Company's Quality Assurance Program, requires that activities affecting quality be accomplished in accordance with documented instructions, procedures or drawings.

Contrary to the above, activities affecting quality were not accomplished in accordance with documented instructions, procedures, or drawings in the following examples:

This in a Severity Level IV violation (Supplement I).

EXAMPLE a

Dresden Operating Procedure (DOP) 1900-3, "Reactor Cavity-Dryer Separator Storage Pit Fill and Operation of the Fuel Pool Cooling and Cleanup System During Refueling," Revision 8, requires constant communication between the refueling floor and the control room while filling the reactor vessel. Constant communication between the refueling floor and the control room was not maintained while filling the Unit 2 reactor vessel on October 14, 1990, resulting in the overfilling of the vessel into the ventilation ducts and contamination of various areas of the third and fourth floors of the reactor building. (50-237/90023-2a (DRP))

DISCUSSION

On October 13, 1990 the reactor cavity flooding evolution began. Prior to beginning the evolution, a Fuel Handling Supervisor had agreed to monitor reactor cavity level from the refueling floor. As cavity flooding progressed, the Fuel Handling Supervisor reported on the cavity level. At 0330 hours on October 14, 1990, the Fuel Handling Supervisor informed Operations that he was leaving and that the level was approximately 1 1/2 feet below the bottom of the ventilation openings. From this point on, the reactor cavity water level was no longer being continuously observed. Later, the Unit 2 NSO dispatched the Equipment Attendant (EA) to visually observe the cavity level. The EA erroneously reported that the level was 16 inches below the bottom of the ventilation openings.

A short time later, the control room received annunciator, "Fuel Pool High Level." The NSO immediately closed the Feedwater Low Flow Valve and dispatched another EA to reject water from the fuel pool cooling system to the Condensate Storage Tank. A Shift Supervisor then proceeded to the fourth floor of the Reactor Building where he saw water coming from the ventilation ducts.

DOP 1900-3 contains a precaution: "Maintain constant communications between the refueling floor and the Control Room while filling the reactor head cavity and the dryer/separator pit to prevent overflow into the ventilation ducting." This was not followed from the time the Fuel Handling Supervisor left the refueling floor until the alarm was received in the control room.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. This event was included in a series of meetings conducted on October 17, 1990 by the Station Manager and attended by all line supervisors of CECo and Contractor organizations on site. The purpose of the meetings was to increase everyone's awareness of several recent events involving personnel error and to require subsequent meetings between these supervisors and all employees to raise the overall on-site awareness level of the need for increased attention to detail.

2. A posted operator aid was revised showing the level of the bottom of the ventilation openings to be 469 inches instead of the previously erroneous value of 476 inches.

3. Operations personnel involved in this event were counselled on the importance of procedure adherence.

4. Procedural adherence was addressed in a Shift Engineer's meeting held on October 24, 1990. Shift Engineers were instructed that procedures must be consulted and adhered to for all complex, unique, or infrequent evolutions.

CORRECTIVE ACTIONS TO PREVENT FURTHER NONCOMPLIANCES

1. DOP 1900-3 will be revised to clarify when continuous visual monitoring is required when flooding the refuel cavity. The requirement for visual monitoring will be specified so that continuous monitoring will not be required for slow moving evolutions when level is more than three feet from the final desired level. The procedure will be revised by March 31, 1991.

2. The Instrument Maintenance Department will revise DIP 0260-01, Figure 1 to correctly depict the bottom of the cavity ventilation openings at 469 inches by March 31, 1991.

3. To aid visual estimates of water level, the Technical Staff will evaluate methods of providing a graduated scale in the Reactor cavity and in the Dryer/Separator pit for Units 2 and 3. An acceptable method will then be implemented by March 31, 1991.

4. This event was reviewed by licensed operators during Cycle 8 of continuing training. This was completed on December 7, 1990. It will be covered for non-licensed operators by March 1, 1991.

5. The EA involved in this event developed an article for the Station's monthly newsletter, discussing the importance of attention to detail, procedural adherence, and the concept of self-checking one's actions.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on October 14, 1990 when the reactor cavity flooding evolution was completed.

EXAMPLE b

Specific practices required by DAP 3-5, "Out of Service and Personnel Protection Cards," Revision 22, were not followed as to preparation, review, approval, documentation and independent verification in the removal and return to service of the Unit 2 diesel fuel oil day tank drain valve on October 20, 1990. This resulted in the inadvertent draining of the day tank when the drain valve was placed in the incorrect position. (50-237/90023-02b (DRP))

DISCUSSION

In preparation for the cleaning of the Unit 2 Diesel Generator Main Fuel Oil Storage Tank, the Diesel Fuel Oil Transfer Pump Suction valve was shut and the Fuel Oil Day Tank Drain valve was checked to be shut by a member of the Operations Staff on October 8 or 9, 1990. "Do Not Operate" tags supplied by the storage tank cleaning contractor were placed on the valves. No CECo Out-of-Service was written for the tank cleaning.

On October 20, 1990, between 10:30 and 11:00 am, the same member of the Operations Staff opened the Transfer Pump Suction Valve. In addition, he opened the Day Tank Drain Valve, even though he had checked that this valve was shut approximately 12 days prior. These valve manipulations were performed without the knowledge of on-shift Operations or procedural guidance.

At approximately 11:20 am on Saturday, October 20, 1990, the "Unit 2 Diesel Generator Day Tank Hi/Lo Level" alarm was received in the Control Room. At approximately the same time, two members of the Technical Staff were in the vicinity of the diesel generator room and observed a strong odor of fuel oil. Upon entering the room, they noticed fuel oil on the floor.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. A member of the Technical Staff traced the source of the fuel spill to the drain on the Unit 2 Fuel Oil Day Tank, found drain valve 2-5212-500 approximately one to two turns open and closed the valve. Approximately 600 gallons of fuel oil were spilled.

2. The involved Operations Supervisor was counseled on the need to interact with Operations Department shift personnel to ensure that all valves necessary to adequately isolate a component are included on the appropriate Out-Of-Service. The involved individual was reminded that unauthorized valve manipulation is against plant policy and could lead to personnel injury or equipment damage.

CORRECTIVE ACTIONS TO PREVENT FURTHER NONCOMPLIANCE

1. The Day Tank drain valves on all three emergency diesels were locked shut. The Locked Valve Checklist and System Checklist will be revised to include the Day Tank Drain on all emergency diesels in the locked closed position by March 31, 1991.

2. The details of this event were reviewed with all station personnel at the October 18, 1990 tailgate meetings, emphasizing the need to properly use the Out-Of-Service program and the hazards of unauthorized equipment manipulations.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on October 20, 1990 when the drain valve was closed.

EXAMPLE c

DAP 7-14, "Control and Criteria For Locked Equipment and Valves," Revision 2, requires manual valves in the flowpath of systems required for plant shutdown during post-accident situations or which provide a controlled path to the environs, including primary and secondary containment isolation valves to be locked. Prior to November 1990, manual valves including the Units 2, 3 and 2/3 diesel generator service water three-way valves and the Units 2 and 3 drywell manifold sampling system containment isolation valves were not locked or designated to be locked (50-237/90023-02c (DRP)).

DISCUSSION

The Diesel Generator Service Water flow reversal valves were erroneously excluded from the locked valve checklist. This was due to the valves having a mechanical locking device which prevents the valves from repositioning. The Station believed that the locking device (which does not have a keyed lock) fulfilled the administrative requirements of the locked valve program.

CECo does not believe that a requirement existed to "lock closed" the 2(3)-8507-500 through 521 Drywell Air Sample Valves. The USNRC had, on two separate occasions, the opportunity to review and assess the acceptability of those valves. On each occasion they found the design to be acceptable:

1. In response to NUREG 0578, in a letter dated February 25, 1980, CECo supplied information on primary containment isolation valves. An excerpt from that letter reads as follows, "All non-essential systems that provide a possible open path out of the primary containment were found to be either isolated by isolation signals, by check valves that would prevent flow out of the containment, by manual valves that are normally closed during reactor operation, or as in the case of instrument lines by closed piping systems." Included were the 2(3)-8507-500 through 521 valves with their classification (non-essential) and a sketch showing their configuration. The USNRC, in a letter dated March 5, 1980, responded, "We conclude that the licensee has completed a re-determination of which containment isolation penetrations are essential or non-essential. All non-essential lines are either automatically isolated by diverse signals or technical justification has been provided. Modifications have been made to prevent inadvertent re-opening of isolation valves. Based on the above, we find that the licensee has satisfied the requirements of this item."

2. Various correspondence exists documenting the scope and depth of the USNRC review of SEP Topic VI-4, "Containment Isolation Systems." An NRC letter dated December 18, 1981, transmitted a draft SER on the topic and requested that CECo provide comments and additional information. CECo's response of May 21, 1982 provided information on the 2(3)-8507-500 through 521 valves. Based upon that response, the NRC issued their final SER on September 24, 1982. Table I of that SER provides a list of valves which they reviewed; the 2(3)-8507-500 through 521 valves are included on that list. A section of the SER titled, "Administrative Control," identifies valves which have inadequate administrative controls and which should be listed as "locked closed" instead of "normally closed." These valves are listed in Table II; the 2(3)-8507-500 through 521 valves are not included. Another section titled, "Manual Isolation Valves," lists other valves which should be in a "locked closed" position; once again the 2(3)-8507-500 through 521 valves are not included.

Although the basis of acceptability for these valves being "normally open" or "normally closed" is not provided in the SERs, it presumably is due to the Drywell Air Sample system being a closed loop system. In any case, the NRC reviewed these valves as part of post-TMI and SEP, and did not require them to be "locked closed."

The Inspection Report and Notice of Violation reference a November 18, 1982 commitment to "review all containment penetrations in the plant and not limit the scope to Table II in the SER." DAP 7-14, "Control and Criteria for Locked Equipment and Valves," is also referenced. One of the DAP 7-14 criteria for locked valves is, "Manual valves which provide a controlled path to the Environs, including Primary and Secondary Containment isolation valves." Since the Drywell Air Sample system is a closed loop system, leakage past these valves would not provide an uncontrolled path to the environs. CECo does not believe that operation of a system consistent with the plant's original design basis and in accordance with NRC SERs and Station administrative programs constitutes a violation of NRC requirements.

During a recent investigation into the use of a temporary sample pump to obtain drywell air samples (in which the Drywell Air Sample system's closed loop was broken), questions arose relative to the ability of the original Drywell Air Sample system to withstand seismic and accident conditions. In view of this recent information, CECo is re-assessing the acceptability the system. Past performance of the system has shown only limited usefulness in its ability to locate sources of leakage into the drywell. With the recent approval of the Station's Generic Letter 88-01 submittal (in which no credit was taken for the Drywell Air Sample system) it is believed that the system may be removed. Final resolution of the Drywell Air Sample system is expected in February, 1991. As an interim measure, valves 2(3)-8507-500 through 521 have been taken out-of-service closed. These valves will remain controlled by the out-of-service or locked closed in accordance with DAP 7-14 as long as the system remains in place. Since no method of locking these valves presently exists, work requests have been written to provide a means of locking them. The valves will be added to the locked valve checklist and locked as appropriate prior to clearing the out-of-service on these valves.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

Temporary Procedure Change 90-408 was written against Dresden Operating Procedure (DOP) 040-M3, "Locked Valve List: Accessible During Operations," adding the Diesel Generator Service Water flow reversal valves to the Locked Valve List. The valves were also locked at that time.

CORRECTIVE ACTIONS TO PREVENT FURTHER NONCOMPLIANCES

1. DOP 040-M3 will be revised by March 31, 1991 to include the Diesel Generator Service Water three-way valves.

2. A review of other valves with mechanical locking devices will be conducted to assure that they are not being inappropriately excluded from the locked valve program by March 31, 1991.

3. DAP 7-14 criteria will be reviewed and revised as necessary to assure the locked valve criteria are easily understood by station personnel. This will be accomplished by March 31, 1991.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on November 27, 1990 when the valves were locked into position.

EXAMPLE d

DAP 15-6, "Preparation and Control of Work Requests," Revision 0, requires work to be performed per repair manual(s), travelers/procedures, or work instructions provided in the work package. On October 15, 1990, work prescribed for disassembly of the Outboard Containment Isolation Feedwater Check Valve 220-62B was performed instead on Outboard Containment Isolation Feedwater Check Valve 220-62A (50-237/90023-02d (DRP)).

ZNLD:708:8

DISCUSSION

As a result of local leak rate tests (LLRTs) performed on September 24 and 30, 1990 on the 2-220-62A and 62B check valves, the decision was made to repair the valves. A maintenance pre-job briefing and ALARA pre-job briefing were performed on October 12, 1990 prior to proceeding to the work area for disassembly of the 62B check valve. The Maintenance Supervisor accompanied his crew to the work location and directed them to begin work on what he believed to be the 62B valve, but was actually the 62A valve.

Upon removal of the valve bonnet and seal ring, the valve body was found full of water and the valve disc stuck in the open position. All work was immediately stopped, the Maintenance Supervisor and Technical Staff were notified of the as found condition. Water was pumped from the valve body and work continued on valve decontamination, inspection and repair.

On October 17, 1990 a Radiation Protection Technician (RPT) surveyed the valve plug and seat. The RPT was concerned that work was being performed on the wrong valve and questioned the crew several times whether they were working on the correct valve. The crew indicated that they were sure they were on the correct valve and that it had been verified with their supervisor.

On October 19, 1990 the Station ALARA Coordinator questioned the reported radioactive contamination levels inside the opened valve and investigated the possibility of work being performed on the wrong valve. This was confirmed to be the case.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. An Out-of-Service was hung for the valve; this included closing the downstream manual valve (2-220-57A) to provide better isolation. Appropriate radiation protection measures were taken, including completing the proper Radiation Work Permit procedures. As the 2-220-62A valve was also scheduled for overhaul due to LLRT results, work was allowed to continue under the proper work package.

2. A tailgate discussing this event was presented on December 20, 1990, emphasizing the need for self-verification and that each nuclear worker has the responsibility to assure the equipment to be worked on is the equipment identified in the work package and that actions to be taken are correct.

CORRECTIVE ACTIONS TO PREVENT FURTHER NONCOMPLIANCES

1. A more positive identification of the 2-220-62A, 62B, and 59 valves for the Unit 2 steam pipe tunnel has been provided. Additional valve identification has been applied to the support structure located over the 62A and 62B valves.

2. A tailgate article will be developed by January 31, 1991 to inform plant personnel that identification tags are expected to be attached on all plant components. If equipment tags are not found, the labeling coordinator should be notified to assure components are properly tagged and operating personnel should be contacted to assist in proper component identification before starting work.

ZNLD:708:9

3. This event will be incorporated into continuing training for Maintenance, Operations, Radiation Protection, and Technical Staff personnel by December 31, 1991. Emphasis will be placed on the potential significance of opening the wrong primary system boundary, opportunities by the working group and others which were available to identify that the wrong equipment was being worked on, and methods by which the correct component could have been identified (outage walkdown, pipe/penetration labeling, RWP survey maps).

4. Radiation Protection Survey Maps will be upgraded as necessary to provide for identification of equipment specified on the maps. This will be completed prior to the next scheduled refuel outages for each unit.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on October 19, 1990 when the 62A valve was properly removed from service.

EXAMPLE e

DAP 15-6, "Preparation and Control of Work Requests," Revision 0, requirements were violated on August 8, 1990, when prescribed for calibration of Unit 3 Torus to Reactor Building Vacuum Breaker A Pressure Transmitter DTP-1622A was performed instead on Pressure Transmitter DPT-1622B. This resulted in advertent opening of the Unit 3 Reactor Building Vacuum Breaker B. (50-237/90023-02e (DRP))

DISCUSSION

On August 8, 1990 the Instrument Maintenance Department (IMD) was performing a calibration check on DPT 1622A [Torus to Reactor Building Vacuum Breaker (AOV 3-1601-20A) Pressure Transmitter] using procedure DIS 1600-20, "Torus to Reactor Building Differential Pressure Transmitter 1622A and B Calibration and Maintenance Inspection."

The Instrument Mechanic (IM) valved-out the DPT1622A transmitter and connected the calibration instruments to obtain a set of as found readings. The as found readings were outside the ideal calibration tolerance range on the conservative side.

For the IM to adjust the calibration setting for DPT 1622A or 1622B he has to get down, turn 180°, arch his head and back under the transmitter. While being upside down, the IM proceeded to adjust what he thought to be DPT 1622A for AOV 3-1601-20A to bring the calibration within specified instrument tolerance range. While he was making the adjustment, the AOV 3-1601-20B opened with a resultant Control Room Annunciator. The IM had adjusted DPT 1622B instead of DPT 1622A.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. The Master Instrument Mechanic counselled the IM involved in this event. Emphasis was placed on total job awareness needing to be maintained at all times a job is in progress. Also emphasis was placed on heightened awareness while working in congested areas of the plant since the possibility of poor job performance is enhanced.

2. The Master Instrument Mechanic discussed this event at a department tailgate meeting. The discussion included a review of the situations on this job and a reminder of what is expected of Instrument Maintenance Department personnel when working in congested areas.

CORRECTIVE ACTIONS TO PREVENT FURTHER NONCOMPLIANCES

1. The labeling of the ΔP transmitters on both units (DPT 1622A and 1622B) will be improved by placing a label above the transmitter and removing any labels below the transmitters.

2. The ΔP transmitters (DPT 1622A and 1622B) will be rotated 180 degrees to relocate the adjustment screws on the top of the transmitter (Work Requests D95106, D95107, D95108, and D95109) by June 1, 1991 (during next refueling outage) for Unit 3 and by October 1, 1991 for Unit 2. This will greatly enhance access to the adjusting screws and minimize the possibility of adjusting the wrong transmitters.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on August 8, 1990 when the Vacuum Breaker was reclosed.

VIOLATION 3

10 CFR 50, Appendix B, Criterion XVI, as implemented by Commonwealth Edison's "Quality Assurance Program," requires that conditions adverse to quality be promptly identified and corrected and, in the case of significant conditions, the measures assure the cause is determined and corrective action taken to prevent repetition.

Contrary to the above, following the fuel bundle mispositioning events of January 10 and 12, 1989, corrective actions were insufficient to prevent repetition in that similar events occurred on October 1, 1990 and October 2, 1990. (50-237/90023-08 (DRP))

This in a Severity Level IV violation (Supplement I).

DISCUSSION

On October 1, 1990, Unit 2 was in the Refuel Mode. Fuel Handlers were unloading fuel from the reactor. The grapple's Core Position Indication System was improperly indicating position in the east-west direction. The current fuel move was the last fuel move from the perimeter of the core. The next fuel move was to be from the interior of the core where no fuel assemblies had yet been removed. The Fuel Handling Supervisor went onto the Refueling Grapple to caution the fuel handling crew that the next transfer was from a different region of the core. After the current step, the duties of the Independent Verifier and the Grapple Operator were scheduled to be exchanged between the two men.

The Grapple Operator grappled the wrong fuel assembly. As the Independent Verifier had been cautioned about the next fuel move, he was studying a core map to determine the location of the next step's fuel transfer rather than independently verifying what the Grapple Operator was doing on the current step. The fuel assembly was erroneously transferred, the Grapple Operator and Independent Verifier exchanged duties, and the "new" Grapple Operator began to perform the next step. While examining the core, the fuel handling crew discovered that the previous fuel move had been performed in error.

At this time fuel moves were suspended while discussions between the Operating Engineer, Shift Engineer and Fuel Handlers took place. Prior to resumption of unloading the core, it was decided that verbal concurrence would be required from the verifier that the proper step was being initiated, prior to removing a fuel bundle from the core. A further review of the event was conducted the next morning.

On October 2, 1990, an Electrical Maintenance Supervisor (EMS) was on the Fuel Grapple to observe the operation of the Core Position Indication System in preparation for repairs scheduled for later in the day. These repairs were to be completed in response to a corrective action from the first unloading error. The Independent Verifier was discussing its operation with the EMS. The Grapple Operator positioned the grapple over the wrong fuel assembly. The Independent Verifier (while engaged in a conversation with the EMS) gave a cursory inspection of the grapple location and latched condition. He then gave the Grapple Operator verbal permission to move the fuel assembly. The fuel assembly was transferred from the core. As the Grapple Operator approached the core location of the next fuel move, he recognized that the previous step was made in error.

These events were similar to the fuel handling errors which occurred during D2R11 on January 10 and 12, 1989. Those errors were also caused by inattention to detail on the part of the Grapple Operator, lack of an effective independent verification program, and poor communications between the Grapple Operator and the Independent Verifier. A memorandum had been issued by the Assistant Superintendent of Operations on January 13, 1989 clarifying the responsibilities of the Independent Verifier. The clarification only included verifying that the <u>correct</u> assembly was latched. This clarification was later incorporated into applicable procedures.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. A discussion was held between members of the Fuel Handling Department (management and bargaining unit), Operations Management and Regulatory Assurance to determine the steps necessary to implement an effective independent verification program. As a result of these discussions, a Temporary Procedure Change (TPC) was made to DFP 800-1, "Unit 2 (3) Master Refueling Procedure," on October 2, 1990, delineating the steps which the Independent Verifier must follow to assure that the correct fuel assembly is being grappled.

2. A meeting was held between the Station Manager, other station management, and members of the fuel handling department on the importance of attention to detail, the importance of proper independent verification, and the importance of good communications on October 2, 1990.

3. A TPC to DAP 7-7, Revision 1, "Conduct of Refueling Operations," was made restricting access of non-fuel handling personnel on the refuel grapple while fuel was being moved.

4. The Core Position Indication System was repaired on October 2, 1990 and the rest of the core was unloaded and later reloaded without error.

CORRECTIVE ACTIONS TO PREVENT FURTHER NONCOMPLIANCES

1. Fuel handling procedures will be revised before the next refueling outage (currently scheduled to begin on March 31, 1991) to delineate the steps which the Independent Verifier must follow to assure the correct fuel assembly is being grappled.

2. Applicable procedures will be revised to establish compensatory actions to be taken during fuel moves to and from the reactor with the Core Position Indication System out-of-service before the next refueling outage.

3. Applicable procedures will be revised to restrict the movement of fuel with non-fuel handling department personnel on the grapple before the next refueling outage.

4. A requirement will be established for fuel handlers to demonstrate the elements of the established independent verification program before (or at the beginning) of each refueling outage. Good communication techniques will also be included in the demonstration. This program will be established before the next refueling outage.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on October 2, 1990 when further effective management controls were established to control activities on the refuel floor and to define responsibilities of the Independent Verifier.